

# **JET PROPULSION LABS**

SUBJECT: CWO 31-2 : Advanced Communications Services  
Reliable Network Service Common Software (ACS RNS CSW)

## **CWO-31-2 STATEMENT OF WORK**

### **1. BACKGROUND**

This Statement of Work (SOW) is for the development of DSN Advanced Communications Service Reliable Network Service Common Software (ACS RNS CSW).

Develop a set of common software libraries that provide an Application Programming Interface (API) that allows various applications on various platforms to access the Fault Tolerant Data Delivery (FTDD) services running on the Reliable Network Server (RNS) platforms. Initially, these libraries will be used on the TCA, GIF, CDR and SPT assemblies.

Implement an accountability system that will account for any data that is missing or lost in the ground communication system (GCS). This will specifically involve development of the core accountability data collection and distribution system, and an Application Programming Interface (API) that hides the underlying architecture and protocols. After development on a Solaris platform, the software will be porting to VxWorks and possibly OS-9 operating system.

### **2. GUIDELINES, CONSTRAINTS and ASSUMPTIONS**

For each step of the CWO, all existing capabilities shall be maintained

JPL shall provide COTs including ISIS and related documentation

ACS RNS API common software design shall meet DSN Infrastructure

### **3 WORK TO BE PERFORMED:**

1. Support DSN Common Services (CS) infrastructure design

2. Develop FTDD libraries to interface client applications with FTDD services.

The components are:

FTDD API Library: Provides a client-side application with programming interface for FTDD services. Also interfaces with one of the transport libraries described below to transfer service data from the client platform to the server platform. Initially, this is being targeted for use on the TCA, SPT,RNS, CDR, and GIF platforms. and possibly DMS.

FTDD ISIS Transport Library: Runs on FTDD clients and uses commercial ISIS protocols to link the client-side FTDD API library functions to the server-side FTDD functions. Initially, this is being targeted for use on the TCA,

RNS,CDR, and GIF platforms.

FTDD TCP/IP Transport Library: Runs on FTDD clients and uses commercial TCP/IP protocols to link the client-side FTDD API library functions to the server-side FTDD functions. Initially, this is being targeted for use on the SPT (OS/9) platform.

RNS TCP to ISIS Agent: Runs on FTDD server and provides an interface between the client-side FTDD TCP/IP Transport Library and server-side ISIS interface to FTDD services. This is to be run on the RNS platform.

3. Develop accountability services.

Collection and distribution of information related to GCS (Ground Communications System) and support application level accountability for TCA including QQCL (Quality, Quantity, Continuity, Latency) data.

4. MSW 131/Isis Agent delivery

Develop an agent to run in the RNS platform that allow DSCC subsystems that use the MSW (890-131, 890-201,..) to interface with the RNS FTDD services (Phase 3b)

5. Integrate and test all functions and interfaces

6. Support assembly CDEs with integration and acceptance tests

7. Provide user documentation and submit to SPMC.

#### **4. IMPLEMENTATION SCHEDULE**

1. Produce a Work Implementation Plan (WIP) for the tasks defined in this Statement of Work, which includes a detailed schedule for the delivery of items. The WIP is to be delivered to JPL 30 days after start of the CWO. The period for accomplishment of the work 9/16/96 - 9/15/97.

2. Task element/function and Schedule

A. FTDD for Solaris platform (RNS, GIF,..)

Provide engineering version for testing 11/4/96

Provide final to SPMC for SUN platform (RNS, GIF,..) 12/6/96

B. FTDD for VxWorks platform (TCA)

Provide engineering version for testing 12/6/96

Provide final to SPMC for TCA 1/7/97

C. FTDD for OS/9 platform (SPT)

Provide engineering version for testing 11/25/96

Provide final to SPMC for SPT 12/15/96

D. Accountability service for SUN platform (RNS)

Provide final version for RNS 11/15/96

E. Accountability service for SUN platform (RNS)

Provide final version for TCA 12/15/96

F. ACS Task Assemblies Integration and Testing support

Start: 11/4/96

Complete Date: 4/1/97 for Phase 3a

G. MSW 131/Isis Agent delivery 9/15/97